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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/382,438	08/25/1999	WILLIAM R. GARDNER	QCPA990482	5232
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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

RYMAN, DANIEL J

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 12/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/382,438

Applicant(s)

GARDNER ET AL.

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1 was amended to contain the limitations of claim 2; however, claim 2 was not cancelled. Since claim 2 only repeats limitations now present in claim 1, claim 2 is deemed to be of improper dependent form.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anglin (WO 99/18684) in view of Tiedemann et al. (USPN 6,335,922).

4. Regarding claim 1, Anglin discloses allocating a reverse link within a band class, the reverse link communicatively coupling a base station and a mobile station (pg. 2 lines 1-6 under Disclosure). This allocation method comprising: transmitting first information on a multi-carrier forward link comprising multiple frequencies (pg. 5 lines 9-18); receiving said first information at said mobile station (pg. 5 lines 13-14) where users are equivalent to a mobile station; transmitting second information on said reverse link (pg. 5 lines 19-21) at one of said multiple frequencies (pg. 4 lines 7-9 and pg. 5 lines 21-22) (the forward link is in frequency bands 2.31-

2.32 and 2.345-2.36 GHz while the reverse frequency range is 1KHz-3 GHz); and receiving said second information at said base station (pg. 5 lines 19-21) where the base station is taken to be the network management center. Anglin possibly does not disclose having the multiple frequencies support any combination of code channels. Tiedemann teaches that “on the forward link, the 1.2288 MHz bandwidth is divided into 64 code channels...Most of the code channels are defined as traffic channels which are allocated, upon demand, to users for voice communication. Some code channels are defined as paging channels...Several code channels...are reserved for system overhead” (col. 1 lines 54-62). Although it is not explicitly stated, it is implicit that this is done in order to allow multiple functions such as paging, voice communication, and system communication to occur in the same frequency bandwidth. It would have been obvious to one of ordinary skill in the art of wireless communication to modify Anglin to include any combination of code channels within the multiple frequencies to allow a frequency bandwidth to incorporate any combination of multiple functions such as paging, voice communication, and system communication depending on the desired application.

5. Regarding claim 2, referring to claim 1, Anglin possibly does not disclose having the multiple frequencies support any combination of code channels. Tiedemann teaches that “on the forward link, the 1.2288 MHz bandwidth is divided into 64 code channels...Most of the code channels are defined as traffic channels which are allocated, upon demand, to users for voice communication. Some code channels are defined as paging channels...Several code channels...are reserved for system overhead” (col. 1 lines 54-62). Although it is not explicitly stated, it is implicit that this is done in order to allow multiple functions such as paging, voice communication, and system communication to occur in the same frequency bandwidth. It would

have been obvious to one of ordinary skill in the art of wireless communication to modify Anglin to include any combination of code channels within the multiple frequencies to allow a frequency bandwidth to incorporate any combination of multiple functions such as paging, voice communication, and system communication depending on the desired application.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anglin (WO 99/18684) in view of Tiedemann et al. (USPN 6,335,922) as applied to claim 2 above, and further in view of Gilhousen et al. (USPN 5,056,109).

7. Regarding claim 3, referring to claim 2, Anglin in view of Tiedemann discloses having a code channel reserved for system overhead such as pilot and sync channels (Tiedemann: col. 1 lines 61-62); however Anglin in view of Tiedemann does not disclose having a code channel on the forward link communicate power control information for the reverse link and a fundamental channel. Gilhousen teaches having a code channel on the forward link communicate power control information for the reverse link and a fundamental channel (col. 2 lines 3-13). Gilhousen does this to maximize system capacity by transmitting each signal at a minimum amount of power (col. 4 lines 23-31). It would have been obvious to one of ordinary skill in the art of wireless communication to communicate power control information for the reverse link and a fundamental channel to maximize system capacity.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anglin (WO 99/18684) in view of Tiedemann et al. (USPN 6,335,922) and in further in view of Gilhousen et al. (USPN 5,056,109) as applied to claim 3 above, and further in view of Odenwalder et al (USPN 6,173,007).

9. Regarding claim 4, referring to claim 3, Anglin in view of Tiedemann in further view of Gilhousen does not disclose having a channel other than one of the code channels to be used as a supplemental channel. Odenwalder teaches a transmit system that includes a supplemental channel (col. 3 lines 4-9). Oldenwalder does this as a way to allow an extended set of channels (col. 3 lines 42-47) to cope with the anticipated demand for higher transmission rates in the forward link relative to the reverse link (col. 1 lines 63-66). It would have been obvious to one of ordinary skill in the art of wireless transmission to include supplemental channels as a way to allow the forward link to have a higher transmission rate than the reverse link.

10. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anglin (WO 99/18684) in view of Tiedemann et al. (USPN 6,335,922) as applied to claim 1 above, and further in view of Jensen et al. (USPN 5,648,955).

11. Regarding claim 5, referring to claim 1, Anglin in view of Tiedemann possibly does not disclose having the reverse link varied over the band class allocated to the mobile station. Jensen teaches "each user station may have a frequency synthesizers which can be programmed to receive and transmit on any one of 223 frequencies" (col. 6 lines 22-25). Although it is not explicitly stated that the reverse link can be varied only over the band class allocated to the mobile station, it would be obvious to do this because the mobile station wants to transmit information over the reverse link such that the base will detect it. This will occur if the transmission is within the band class allocated to the mobile station. Jensen does this to add flexibility to the communication system (col. 1 lines 49-50). It would have been obvious to one of ordinary skill in the art of wireless communication to have the reverse link be varied over the band class allocated to the mobile station in order to increase the flexibility of the system.

12. Regarding claim 6, referring to claim 5, Anglin in view of Tiedemann in further in view of Jensen discloses limiting the number of multiple frequencies to only three (Jensen: col. 3 line 63-col. 4 line 5). Jensen does this to minimize interference between adjacent cells when having frequencies reused (col. 3 lines 49-51 and col. 3 line 63-col. 4 line 5). It would have been obvious to one of ordinary skill in the art of wireless communications to have the multiple frequencies be limited to three frequencies to allow for minimization of interference between adjacent cells when implementing frequency reuse.

13. Regarding claim 7, referring to claim 6, Anglin in view of Tiedemann in further in view of Jensen discloses having the multiple frequencies be adjacent frequencies (Jensen: col. 3 lines 63-65). One reason that frequencies are placed adjacent to each other is to ensure that the entire frequency band is efficiently used. It would have been obvious to one of ordinary skill in the art of wireless communication to have the frequencies adjacent to each other so that efficient use of the frequency band is realized.

14. Regarding claim 8, referring to claim 6, Anglin in view of Tiedemann in further in view of Jensen discloses that it is clear to those of ordinary skill in the art that air channels may be multiplexed using many means including FDMA by assigning air channels to differing frequency bands, CDMA by assigning air channels to differing spread-spectrum spreading codes, other multiplexing techniques (including TDMA), or combinations of multiplexing techniques (Jensen: col. 20 lines 52-62). It would be obvious to use differing techniques depending on the application and what multiplexing arrangement best fit that application. It would have been obvious to one of ordinary skill in the art of wireless communications to have multiple adjacent frequencies separate from another frequency supporting another type of channel in order to allow different

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application to be used with each application taking advantage of its most applicable multiplexing arrangement.

15. Regarding claim 9, referring to claim 8, Anglin in view of Tiedemann in further in view of Jensen discloses that the preferred embodiment of Jensen's system is implemented with TDMA or TDD (Jensen: col. 3 lines 36-40). Although Jensen does not specifically disclose using FDD because Jensen's disclosed embodiment only details TDMA/TDD, Jensen does disclose that the system can be implemented with FDMA techniques. If TDD can be implemented as well as TDMA in the system, it would be obvious that if FDMA techniques are also possible that FDD could also be implemented within the system.

Response to Amendment

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-6743 for regular communications and (703)308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

DTZ

Daniel J. Ryman
December 2, 2002

Daniel J. Ryman
Examiner
Art Unit 2665


HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600